NSCMP Mission Statement

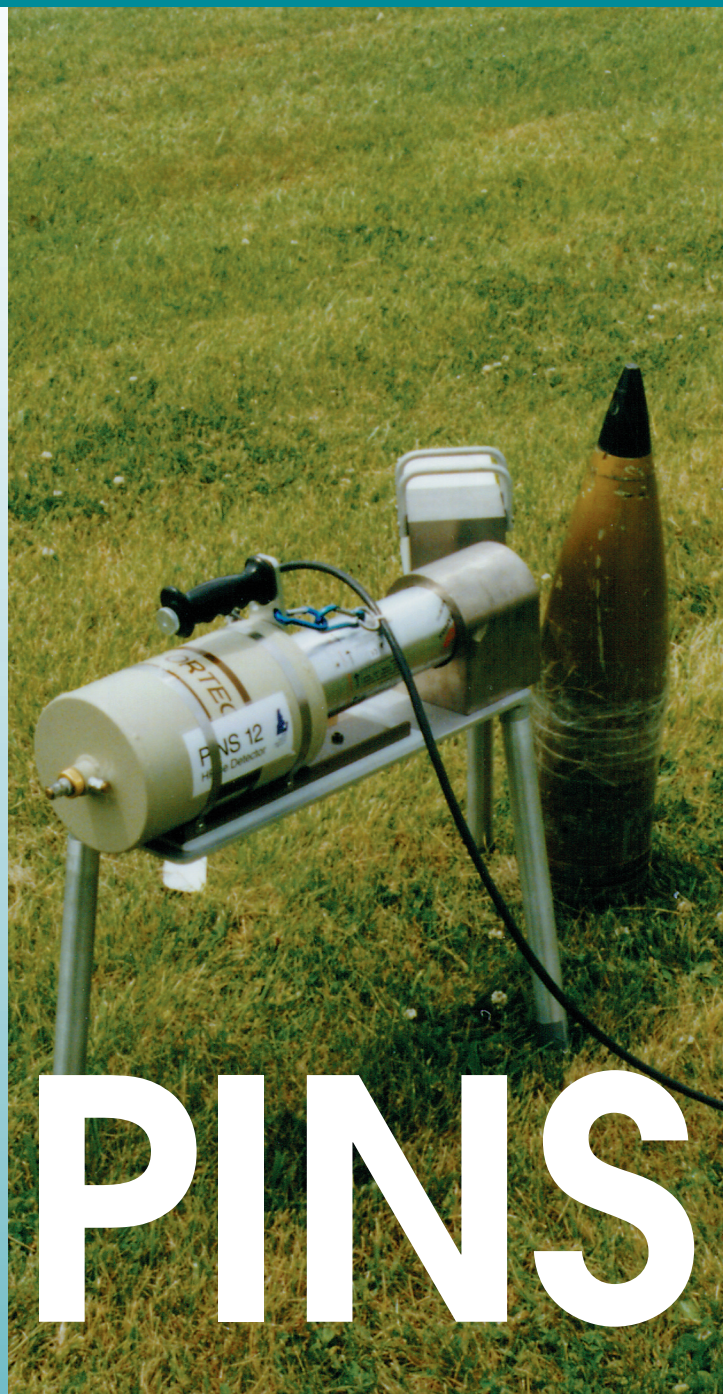
The Non-Stockpile Chemical Materiel Project (NSCMP), which is under the U.S. Army Program Manager for Chemical Demilitarization (PMCD), was established to provide centralized management and direction to the Department of Defense for the disposal of non-stockpile chemical materiel in a safe, environmentally sound, and cost-effective manner. Specifically, the Product Manager for Non-Stockpile Chemical Materiel is charged with:

- identifying the type and location of chemical warfare materiel requiring destruction
- researching, developing, and testing chemical warfare materiel destruction technologies
- destroying former chemical weapons production facilities and related equipment
- supporting the Chemical Weapons Convention treaty obligations

For more information, please call the Public Outreach and Information Office for the Program Manager for Chemical Demilitarization at: (800) 488-0648
or visit our web site at:
www-pmcd.apgea.army.mil

PMCD
Program Manager for Chemical Demilitarization

Portable Isotopic Neutron Spectroscopy System



PINS

What is the Portable Isotopic Neutron Spectroscopy (PINS) system?

The PINS system is a non-intrusive instrument that analyzes recovered munitions without opening them. This portable identification technology allows for the safe handling and analysis of munitions with unknown contents. This technology has been used for more than 40 years in geological studies, criminal investigations, the analyses of food impurities, and in the detection of explosives at airports.

Why was the PINS system developed?

The PINS system is being used to help the U.S. Army accomplish its mission to dispose of recovered chemical warfare materiel in a safe and environmentally sound manner. The PINS system minimizes the handling of recovered chemical munitions, and is more protective of human health and the environment.

What are the major components of the PINS system?

The PINS system uses three components to identify the elements inside a munition:
(1) a neutron source,
(2) a gamma ray detector, and
(3) a multi-channel analyzer.

How is the PINS system used with the NSCMP transportable treatment systems?

The PINS system is a major component of the Mobile Munitions Assessment Systems (MMAS). The MMAS collects the necessary data to assess the risks with the handling, transporting, and disposing of recovered munitions. The MMAS was created to identify the contents of unidentified munitions without opening them, and communicate that information to response personnel.

How does the PINS system operate?

1. The neutron source is placed close to the munition. The neutrons penetrate the munition's shell and interact with the contents, producing gamma rays, which are similar to x-rays.
2. The gamma-ray detector then monitors the energies and intensities of the gamma rays released from the neutron interactions.
3. A multi-channel analyzer powers the equipment and receives electrical impulses from the gamma-ray detector.
4. Information received by the multi-channel analyzer is sorted and converted into an energy spectrum that is analyzed.
5. Since different elements produce characteristic energy spectra, the analysis can predict the presence and relative concentration of specific chemical elements.